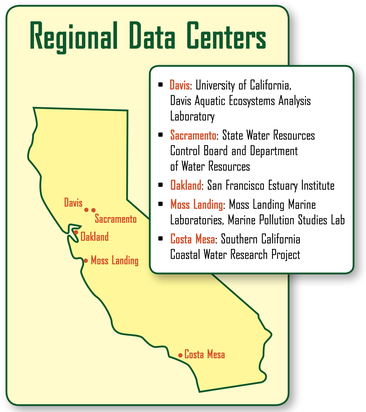
CEDEN

California Environmental Data Exchange Network Supports Sharing of Ambient Monitoring Data

Many agencies, university groups, private entities, bond-funded monitoring programs, and stakeholder entities throughout California collect vast amounts of environmental data. Consolidated data sources can promote a more comprehensive understanding of the status, trends, and environmental processes and mechanisms in California.

The California Environmental Data Exchange Network (CEDEN) is a shared database network that stores and provides standardized environmental-related data through collaborative data exchange at local and statewide levels. CEDEN works with data-collection groups in two ways: to integrate their data and to provide users of the state's ambient monitoring data with a standardized system for the data. This integration and standardization facilitates more robust adaptive management strategies and improved information for 305(b) reporting, 303(d) listings, and Total Maximum Daily Load (TMDL) calculations. Access to the CEDEN system also promotes creation of applications that convert monitoring data into refined information, helping the state to convey important aspects of surface water information to the public and the legislature.

Regional Data Centers



- Davis: University of California, Davis Aquatic Ecosystems Analysis Laboratory
- Sacramento: State Water Resources Control Board and Department of Water Resources
- Oakland: San Francisco Estuary Institute
- Moss Landing: Moss Landing Marine Laboratories, Marine Pollution Studies Lab
- Costa Mesa: Southern California Coastal Water Research Project

Contact CEDEN to Learn More
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CEDEN Goals

1. Storage and management of data locally by those who know the most about the data.
2. An integrated network of regional data centers (RDCs) working with local groups to provide data management services, aggregate the data at a regional level, then provide these data to CEDEN.
3. Improved interoperability of monitoring data across multiple programs through standardized protocols and quality assurance/ quality control (QA/QC) procedures for data collection and dissemination. Examples of standardization include the names of fish species, locations, analytes, analytical methods, QA/QC procedures, and sampling procedures.

Setting Monitoring Standards

The State Water Resources Control Board (SWRCB) has assumed the lead in the collaborative effort among multiple agencies supporting CEDEN. The Office of Information Management and Analysis (OIMA) endorses the CEDEN program to meet the SWRCB's objectives.

Many data generators are now required by the state to produce data using consistent vocabularies and quality assurance (QA), quality control (QC), and monitoring protocols developed by the Surface Water Ambient Monitoring Program (SWAMP) and adapted by CEDEN. Data submitted to CEDEN using these standards increase comparability between data generators. Historical data sets and data generated by entities not required to follow SWAMP protocols are also stored in CEDEN. Cross-walking and other tools will be developed to include these data in CEDEN.

The use of distributed data technology and the SWAMP and CEDEN standards is proposed to facilitate data access, sharing, and standardization of the state's environmental monitoring data so data can be used interchangeably among multiple monitoring programs and reporting systems.

CEDEN Participants

CEDEN data participants can be broadly divided into three categories: data providers, data users, and regional data centers (RDCs).

Data Providers

Data providers are groups that provide ambient monitoring data, including fish monitoring, bioassessment, benthic analyses, pesticides, nutrients, water quality, meteorological, hydrodynamic, GIS coverage, toxicity, and bioaccumulation data, as well as field data, habitat data, and other information.

Data Users

Through CEDEN, data users access integrated monitoring data across different monitoring programs. Data users include the public, the legislature, operational planners, researchers, graduate students, consultants, governmental and non-governmental organizations, and activist groups.

Regional Data Centers

Regional data centers (RDCs) serve as focal points for data consolidation within California and typically assist multiple agencies and programs in their data management and in the migration of data into CEDEN. RDCs can assist with data management, outreach, education, data quality assurance and quality control (QA/QC), organization, and other services to their local users to:

- Help standardize user monitoring programs
- Improve data quality and interoperability
- Promote community involvement
- Set up the mechanism of transferring data to the RDC

The RDCs integrate their data into CEDEN to form the statewide network. Five organizations serve as regional data centers.

Moss Landing Marine Laboratories, Marine Pollution Studies Lab (MLML/MPSL) performs a wide array of environmental field sampling, project management, and database management functions. MLML/MPSL serves as the lead organization responsible for organization and implementation of CEDEN, as well as serving as CEDEN's regional data center for the central coast region.

Southern California Coastal Water Research Project (SCCWRP) is a research institute focusing on the coastal ecosystems of Southern California, from watersheds to the ocean. Currently SCCWRP is integrating datasets from the Stormwater Monitoring Committee and several large data generators from Southern California.

The San Francisco Estuary Institute (SFEI) fosters the development of the scientific understanding needed to protect and enhance the San Francisco Estuary. SFEI manages many research and monitoring programs within the San Francisco Bay and Delta region. SFEI is currently working with data generators in the Bay-Delta and surrounding areas.

The University of California, Davis data center is managed through the Aquatic Ecosystems Analysis Laboratory (UCD-AEAL) at UC Davis, which also conducts monitoring for a variety of water quality projects. Data from other projects are received after project-specific verification and validation and reviewed by the UCD-AEAL database management staff to ensure comparability with other CEDEN data.

EPA Exchange Network is an Internet-based system used by federal, state, tribal, and territorial partners to securely share environmental and health information with one another and Environmental Protection Agency (EPA).

CEDEN Supporters

The following contributors support the CEDEN program: Surface Water Ambient Monitoring Program (SWAMP), Department of Water Resources (DWR), Environmental Protection Agency (EPA), and each of the five regional data centers: Moss Landing Marine Laboratories, Marine Pollution Studies Lab; Southern California Coastal Water Research Project; San Francisco Estuary Institute; UC Davis Aquatic Ecosystems Analysis Laboratory; and EPA Exchange Network.

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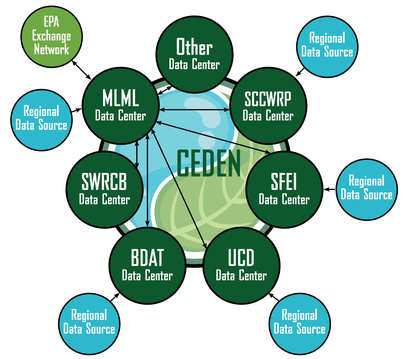

PARTICIPATING AGENCIES:

EPA • United States Environmental Protection Agency
California Water Boards
SWAMP Surface Water Ambient Monitoring Program
Department of Water Resources, State of California
Moss Landing Marine Laboratories
SFEI
SCCWRP Established 1969
UC Davis Aquatic Ecosystems Analysis Laboratory